

BIGLER, N.S.; SHARYGINA, I.I.; KASPAROVA, A.B.; YAKOVLEV, V.A.;  
GRINOVICH, N.M.; YUDINA, A.I.; SEMICHENKO, S.P.;  
STOLYAROV, A.I.; FURSEVA, I.A.; KOZLOV, I.D., red.;  
SERPCHENIL, S.M., red.

[Leningrad and Leningrad Province in figures; a statistical abstract] Leningrad i Leningradskaya oblast' v tsifrakh; statisticheskii sbornik. Leningrad, Lenizdat, 1964. 250 p. (MIRA 1811)

1. Leningrad (Province) Statisticheskoye oblastnoye upravleniye.
2. Statisticheskoye upravleniye goroda Leningrada (for Bigler, Sharygina, Kasparova, Yakovlev, Grinovich, Yudina).
3. Statisticheskoye upravleniye Leningradskoy oblasti (for Semichenko, Stolyarov, Furseva).
4. Nachal'nik Statisticheskogo upravleniya goroda Leningrada (for Kozlov).

STOLYAROV, A.K.

Using ferrites in waveguide technology. Elektrosviaz' 11  
no.5:34-45 My '57. (MIRA 10:12)  
(Wave guides)

MIKAYEL'YAN, A.L.; STOLYAROV, A.K.

Ferrite waveguide valves using ferromagnetic resonance. Radio-  
tekhnika 12 no.10:17-30 0 '57. (MLRA 10:11)

1. Deyatvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radio-  
tekhniki i elektrosvyazi im. A.S. Popova (for Mikayelyan).  
(Wave guide)



CONFIDENTIAL

<p>12 items (1 to 16 items)</p> <p>A. 1. Form A. 2. Original A. 3. Duplicate A. 4. Summary A. 5. Notes A. 6. References A. 7. Bibliography A. 8. Index A. 9. Glossary A. 10. Appendix A. 11. Tables A. 12. Figures A. 13. Maps A. 14. Photographs A. 15. Audio A. 16. Video A. 17. Other</p>	<p>13 items (1 to 22 items)</p> <p>A. 1. Form A. 2. Original A. 3. Duplicate A. 4. Summary A. 5. Notes A. 6. References A. 7. Bibliography A. 8. Index A. 9. Glossary A. 10. Appendix A. 11. Tables A. 12. Figures A. 13. Maps A. 14. Photographs A. 15. Audio A. 16. Video A. 17. Other</p>
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report submitted for the International Meeting of the Scientific Technological Society of  
Radio Engineering and Electrical Communications in A. S. Paper (VRSI), Moscow,  
6-12 June, 1959

SOV/109-4-7-2/25

**AUTHORS:** Mikaelyan, A.L. and Stolyarov, A.K.

**TITLE:** Surface Waves in Ferrite Waveguides

**PERIODICAL:** Radiotekhnika i elektronika, 1959, Vol 4, Nr 7,  
pp 1079 - 1093 (USSR)

**ABSTRACT:** First, three dielectric waveguides are briefly discussed. The properties of these systems are summarised in the table on p 1080. The first system is a dielectric layer (see the top figure in the table). The second system is a waveguide with a dielectric layer and a single side wall; this is illustrated by the middle figure in the table. The third system is in the form of a waveguide whose one wall is covered with a dielectric layer (see the lower figure in the table). Similar systems containing ferrites instead of dielectrics are then analysed. The first ferrite system is illustrated in Figure 1. It is shown that the field components of the H waves for this system are given by Eqs (1), while the formula for the evaluation of the propagation constant is expressed by Eq (2) (see the earlier article of the author - Ref 1).

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SOV/109-4-7-2/25

# Surface Waves in Ferrite Waveguides

The equations are employed to represent the characteristics of the system by means of a number of graphs. These are shown in Figures 2-5. Figure 2 represents the propagation constants of the waves propagating along a ferrite layer having a width  $x_0/\lambda_0 = 1$  (Figure 1). Figures 3 represent the structure of the field propagating along the ferrite layer. Figure 4 shows the propagation constant for the waves propagating along a layer having a width of  $x_0/\lambda_0 = 0.2$ . Figure 5 illustrates the dependence of the propagation constants for a lower-type wave on the width of the ferrite layer. Next, a ferrite-filled waveguide with one wall is considered (Figure 6). The expressions for the fields in this waveguide are given by Eq (7), while the propagation constant can be evaluated from Eq (8) (Ref 1). The properties of the waveguide of Figure 6 are illustrated in Figures 7,8,9. Figure 7 illustrates the propagation constant as a function of frequency for a ferrite plate having a thickness  $x_0/\lambda_0 = 1$ . Figure 8 shows the cut-off effect in the waveguide as a function of

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Surface Waves in Ferrite Waveguides

SOV/109-4-7-2/25

the width of the ferrite. The propagation constants for a waveguide having a ferrite width  $x_0/\lambda_0 = 0.15$  is illustrated in Figure 9. Finally, a standard waveguide, whose one wall is coated with a layer of ferrite, is considered. The expressions for the fields in this system are known and can be represented by Eqs (11). The propagation constants can be evaluated from Eq (12), which describes all the waves which can exist in the system. The properties of this waveguide are illustrated in Figures 11-14. Figure 11 shows the propagation constants for a ferrite plate having a width of  $0.2 \lambda_0$ . The dependence of the propagation constants on the relative thickness of the ferrite is illustrated in Figure 12; the calculations were made for  $\mu_{\perp} = -5.4 \mu_0$ . The dependence of the propagation constants on the relative thickness of the ferrite for  $\mu_{\perp} = +0.36 \mu_0$  is shown in Figure 13. The phase and group velocities of the

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Surface Waves in Ferrite Waveguides

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ferrite surface waves are illustrated in Figure 14. Some experimental work was carried out to corroborate the theoretical results. The experiments were carried out on a rectangular ferrite-filled waveguide and the results are illustrated in Figure 15. This shows the attenuation of the direct (dashed curves) and reversed (solid curves) waves on the magnitude of the external magnetic field for the ferrite plates of various widths. The experiments confirm the possibility of producing a waveguide which would propagate the waves in one direction. There are 15 figures, 1 table and 4 references, of which 3 are English and 1 Soviet.

SUBMITTED: August 7, 1958

Card 4/4

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30V/109-8-2-12/20

AUTHORS: Mikhelyan, A. I., Stolyarov, A. K., Koblova, M. M.

TITLE: Resonant Ferrite Systems with Large Value Ratio

ABSTRACT: Radiotekhnika i elektronika, 1980, Vol 5, No 2, pp 11-17 (USSR)

Annotation is made of previous work by the authors (Vys. Frekv., 1977, No. 11, No. 12; and 1978, No. 1) and the present work with ferrite. The authors show that the use of ferrite in the form of a thin film on a dielectric substrate, which is resonant at the operating frequency, makes it possible to obtain a large value of the ratio of the quality factor to the volume of the ferrite. The authors also show that the use of ferrite in the form of a thin film on a dielectric substrate, which is resonant at the operating frequency, makes it possible to obtain a large value of the ratio of the quality factor to the volume of the ferrite.

It is evident from the above that the ferrite plate thickness has a significant influence on the shape of resonance loss curves for a direct wave. A significant separation in the resonance frequencies of the direct and reverse waves is observed only in cases when the ferrite plate has an adequate thickness and, consequently, supports the field structure of an empty waveguide. If very thin ferrite plates are used, the direct and reverse fields converge.

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Fig. 4. Dependence of the rate of  
absorption of light on the  
high-frequency field  
strength (1000 V/cm).

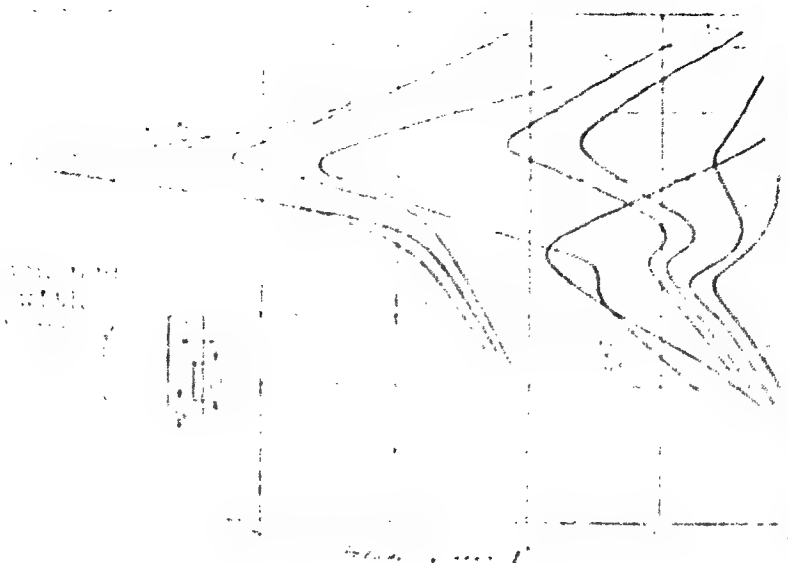
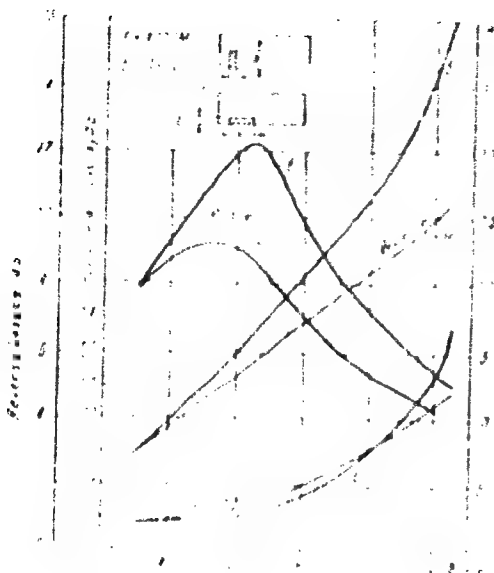


Fig. 4





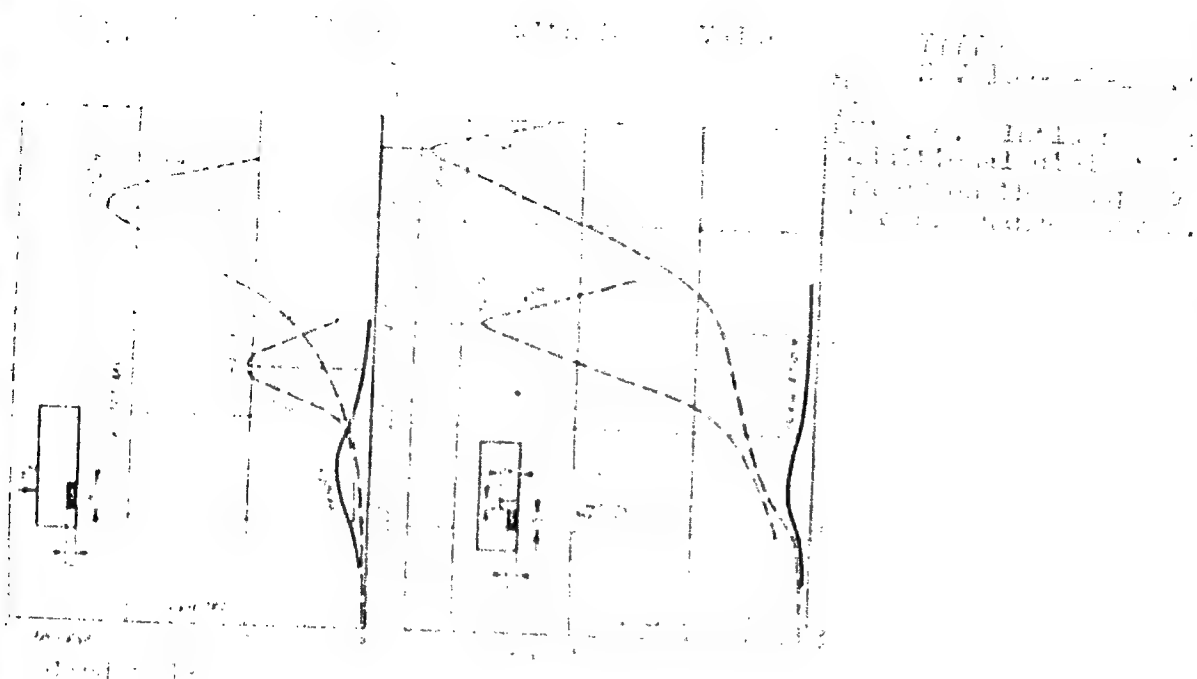






Figure 1  
10-10-1977

with RMX-1 in the case of the first series of experiments at the  
highest of excitation intensities of the pump laser, i.e.,  
at  $10^{-4}$  W/cm<sup>2</sup> (1). The calculated results

show that  $\epsilon''$  is  $10^{-3}$  to  $10^{-2}$  in the range of the signal  
frequencies. Thus, the experiment yielded a figure  
nearly twice as high as that calculated parallel. It  
is evident that an increase in attenuation ratio with  
RMX-1 results is caused by a dependence of direct  
and reverse wave amplitudes. (2) Characteristics  
of valves: Using the data of the above experiments,  
the valves were constructed of which one can be used  
for self-delay lines in the 8 cm, and the other in  
the 3 cm wave range. Two types of isolates were used:  
RMX-1 (magnetic saturation 1.5 G/cm) and MX-2  
(magnetic saturation 0.5 G/cm). Their characteristics  
are shown in Figs. 10 and 11.

Oct 11 1977

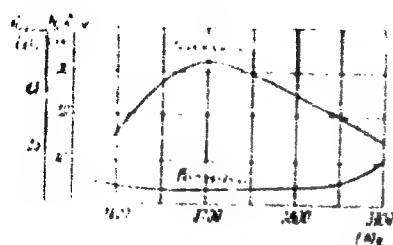


Fig. 11. Characteristics of four-terminal device.

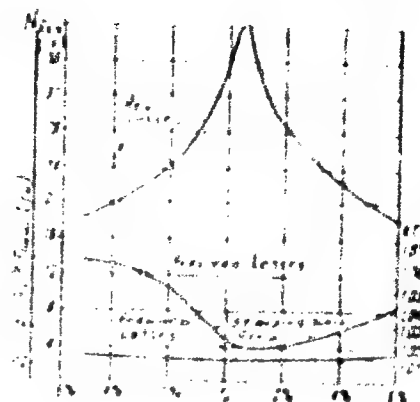


Fig. 11. Characteristics of four-terminal device.

Fig. 11.14

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S/109/60/005/05/005/021  
E140/E435

9.1300

AUTHORS: Stolyarov, A.E. and Mikaelyan, A.L.

TITLE: The Approximate Theory of Ferrite Resonant Isolators, 7

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol 5, Nr 5,  
pp 740-761 (USSR)

ABSTRACT: This paper was presented at the Jubilee Session of the  
A.S. Popov Scientific-Technical Radio Engineering and  
Electrical Communications Society, June 12, 1959.

An approximate theory valid for thin ferrite plates is developed, clarifying the effects of the auxiliary dielectric layer. Rectangular and strip waveguides are considered. The restriction to thin ferrite plates is due to the use of the quasi-static approximation. The field in the part of the waveguide not filled by the gyrotropic material must be considered unchanged by introduction of the ferrite. The case of the ferrite in the E-plane of a rectangular waveguide has been studied by the present authors (Ref 3) and the present paper reproduces only the basic results. The case of the ferrite plate in the H-plane is then considered in detail. It is

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### The Approximate Theory of Ferrite Resonant Isolators

found that the optimum position of a ferrite plate in a waveguide depends on its width  $h$ . For wider plates the optimal position is closer to the side wall of the waveguide. The position is independent of ferrite parameters and is a function only of waveguide dimensions and wavelength. This distinguishes the H-system from the E-system, in which the optimum position of the ferrite depends substantially on the ferrite parameters. The maximum isolation ratio obtainable is the same for both types of isolator. For the H-type isolator, the optimum condition is that in which the magnetic field in the ferrite has a left-hand circular polarization. When the ferrite begins to occupy more than 7% of the waveguide wall width, the isolation ratio of the system deteriorates. This is due to the fact that for a wide plate the left-hand circular polarization of the magnetic field exists only at the central point. In resonant isolator systems the following conclusions are drawn:

1. The maximum isolation ratio is independent of the shape of ferrite plate when the quasi-static approximation

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**The Approximate Theory of Ferrite Resonant Isolators**

is valid; 2. The optimum location of the ferrite in the waveguide depends on its shape and, in the E-plane, on the ferrite parameters. Passing to consideration of the effect of dielectric, the author concludes that the maximum isolation ratio obtainable from a ferrite-dielectric plate is independent of the dielectric constant and cannot exceed the ratio obtained in a waveguide with ferrite without dielectric layer. The role of the dielectric is the stabilization of the field configuration inside the ferrite over a broad band of frequencies but, due to the presence of loss in the dielectric, optimum thickness and dielectric constant of the dielectric exist. The theory neglects a number of phenomena observed with thick ferrite plates not completely filling the waveguide height, such as shift of resonant frequency of the forward wave in comparison with the backward wave, the existence of an optimum height for the E-type ferrite plate etc. There are 27 figures, 2 tables and 3 Soviet references.

SUBMITTED: August 17, 1959

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MIKHAYAN, A.L.; STOLYAROV, A.K.

Resonant ferrite rectifiers. *Elektrosvias'* 14 no.8:42-47 Ag '60.  
(MIRA 13:9)

(Microwaves)

(Wave guides)

MIKAE LYAN, A.L. ; STOLYAROV, A.K.

Question on the design of resonant ferrite valves. 'Elektrosviaz'  
14 no.9;42-51 S '60. (MIRA1)19)  
(Waveguides)

9.1900 (1127)

S/108/61/016/011/001/007  
D201/D304

AUTHORS: Mikaelyan, A.L. and Stolyarov, A.E., Members of the  
Society

TITLE: A 'cut-off' type ferrite switch

PERIODICAL: Radiotekhnika, v. 16, no. 1, 1959, 6 - 17

TEXT: This paper was presented at the Jubilee Session of NTOR and  
E in. A.S. Popov, June 14, 1959. In an earlier article, the authors  
investigated the properties of a wave propagation in a rectangular  
waveguide with a transversely magnetized ferrite layer (Ref. 1:  
Radiotekhnika i elektronika, v. 4, no. 7, 1959). In the present ar-  
ticle, the authors investigate the independent effects in the cut-  
-off waveguide with magnetized ferrite in order to establish the  
required conditions for obtaining the type of switch described in  
the title. The main problem of analyzing a cut-off waveguide with  
ferrite reduces to evaluating losses in the forward and backward di-  
rections and to determining their dependence on frequency, ferrite  
parameters, transverse dimensions of waveguide etc. The calculati- ✓

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A 'cut-off' type ferrite switch

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D201/D304

ons are extremely involved and result in solutions of a transcendental equation in the complex plane, a problem difficult even when being solved with an electronic computer [Abstractor's note: The computers calculations were made by Engineer V.P. Anan'yeva]. There is another delicate point in these calculations and that is that the cut-off waves in a waveguide with a ferrite layer, are determined not by the imaginary, but by complex propagation constants even when no losses are present. Calculations have shown that with losses present in the ferrite the energy within the empty portion of the waveguide does not change while the backward energy going through the ferrite is heavily attenuated. Thus, when losses are present, there is in a cut-off waveguide an energy beam in the direction of propagation; this becomes smaller in proportion to the increase in system losses. It follows that if ferrite losses are finite, matching arrangements may be used to tune the system and to dissipate in the ferrite all ingoing power. The losses of the forward wave are related to the magnitude of  $\gamma_y''$  (the propagation constant  $\gamma_y$  is complex and equal  $\gamma_y = \gamma_y' + i\gamma_y''$ ) in a linear manner. X

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D201/D304

A 'cut-off' type ferrite switch

The backward wave, being a cut-off wave is heavily attenuated. When losses are absent the forward wave is shown to be fully reflected from the switch input. But then the forward wave becomes fully reflected from the other end of the switch, since the system then represents a reactive four-pole with equal moduli of a transfer coefficient in both direction. Thus the system cannot operate as a switch with no ferrite losses as it would not be consistent with the law of conservation of energy. When losses are present in the ferrite, the backward wave is fully absorbed in the switch and hence, the forward wave will be propagated with little attenuation. The backward wave may be impelled to go into the switch by using any matching element. The smaller the ferrite losses, the narrower is the matching range. Also, a switch with high back-to-front ratio is obtained for ferrites with small losses. In an actual example which is not optimum, at a wavelength of 3.2 cm the attenuation of the backward wave is 26 db/cm and is practically independent of ferrite losses  $\delta$ . The forward wave attenuation is 0.35 db/cm at  $\delta = 0.01$  and 0.7 db/cm at  $\delta = 0.02$ . The measurements carried out at the field strength of  $H_0 = 2200$  oersted showed that  $\beta_{bck} \sim 63$  db,  $\beta_{dir}$  X

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A 'cut-off' type ferrite switch

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~6, SWR = 5. The SWR for a cut-off switch is, therefore, rather high. By introducing matching from both ends, ~~the~~ attenuation of forward waves is reduced to  $\beta_{co} = 1$  db at SWR = 1.1. Analysis of the effect of the ferrite layer, waveguide dimensions has shown that in evaluating the attenuation of a cut-off type switch in the backward direction, it is enough to take into account the lower cut-off modes of waves. The ferrite surface wave at  $\mu_1 < 0$  may propagate with small losses in the waveguide, provided the ferrite thickness is small. The experimental frequency characteristics show a slow decrease in the backward wave attenuation with increasing frequency which is said to be due to the fact that the electric waveguide dimensions increase and these dimensions have been found to affect the attenuation of the backward wave. The attenuation frequency characteristic of the forward wave is increased sharply at both ends due to approaching to the ferrite resonance and to the region of dispersion near  $\mu_1 = 0$ . Proper choice of the latter can make the working frequency band of the cut-off switch 30 ÷ 35 %. In general, good agreement has been found between theory and experiment.

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D201/D304

A 'cut-off' type ferrite switch

ments. There are 17 figures and 2 Soviet-bloc references.

ASSOCIATION: Nauchno tekhnicheskoye obshchestvo radiotekhniki i  
elektrosvyazi im. A.S. Popova (Scientific and Techni-  
cal Society of Radio Engineering and Electrical Commu-  
nication im. A.S. Popov) [Abstractor's note: Associa-  
tion taken from 1st page of journal!]

SUBMITTED: March 15, 1961

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Card 5/5

L 17819-03

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ACCESSION NR: AP3004953

S/0108/63/018/008/0074/0080

140  
49

AUTHOR: none

TITLE: Nineteenth All-Union Session of NTORIE im. A. S. Popov (see "Association") Celebrating the Day of Radio, closed on 11 May 1963

SOURCE: Radiotekhnika, v. 18, no. 8, 1963, 74-80

TOPIC TAGS: conference, session, electronics conference, electronics session

ABSTRACT: The Session included 2 plenary meetings and 18 section meetings. There were 272 reports delivered by Soviet and 12 reports delivered by foreign scientists and engineers. The total number of specialists participating in the Session was 1,800, including 25 foreign representatives. Four reports before the first plenary meeting were made by: V. I. Siforov, Corresponding Member of AN SSR and Chairman of the NTORIE Central Board, on the laws of development of natural sciences and electronics; Academician A. L. Mints on toroidal

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ACCESSION NR: AP3004953

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electron accelerators; Professor G. V. Braude on the 25th anniversary of Soviet TV; and a French engineer, A. Aysberg, on international publications in radio and electronics. Two reports before the closing plenary meetings were made by: M. L. By\*khovskiy, Doctor of technical sciences, on the use of cybernetics in medical diagnoses, and L. P. Kravemir, Candidate of technical sciences, on the problems of storing information in cybernetical systems. The Section of Theory of Information, under B. R. Levin, heard and discussed 22 reports on coding theory, signal synthesis, increasing the reliability of information, detecting and isolating signals from noise background, noise immunity of reception, correlation analysis, statistics in electronic channels, and accuracy of reliability prognoses. Those participating in the Section work were: L. M. Fink, Yu. S. Legin, Yu. L. Zorokhovich, Yu. M. Marty\*noy, L. M. Mashbits, L. D. Kislyuk, G. A. Shastova, Y. T. Goryainov, V. I. Tikhonov, P. V. Mazurin, I. A. Tsikin, N. P. Khvorostenko, D. D. Klovskiy, Yu. I. Samoylenko, A. A. Zyuzin-Zinchenko, V. N. Teterev, A. A. Pirogov, M. A. Sapozhkov, I. T. Turbovich, G. I. Tsemmel', O. A. Petrov, Yu. G. Pollyak, G. V. Maly\*shey, G. A. Ball, A. S.

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ACCESSION NR: AP3004953

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Shvy\*gin, S. F. Simovskaya, I. V. Sukharevskiy, A. I. Velichkin, V. S. Borodin, Dr. D. A. Haffman (Lincoln Laboratory, MIT), A. I. Alekseyev, B. B. Gurfinkel', A. F. Terpugov, A. F. Fomina, and V. S. Bleykhman. The Section of Cybernetics, under B. S. Fleyshman, dealt with reports on the theory of systems, investigation of operations, and recognition of patterns. Participating were: V. M. Berezhnov, B. V. Gnedenko, G. P. Basharin, V. V. Ry\*kov, A. A. Vdovin, A. O. Kravitskiy, A. Ye. Basharinov, N. I. Ananov, K. P. Kirdyashev, A. L. Lunts, V. L. Braillovskiy, V. A. Kondrat'yeva, N. S. Misjuk, N. A. Lepeshinskaya, O. A. Liskovets, and A. S. Mast'kin. The Section of SHF Ferrite Devices, under A. L. Mikaelyan, had a report on new waveguide-ferrite devices by A. I. Mikaelyan and M. M. Koblova; a report on a circular waveguide with a longitudinally-magnetized bar by G. I. Veselov; a report on cross-shaped circulators by A. K. Stolyarov, I. P. Tyukov, and V. M. Oranzherev; and a report on  $(0.9-10) \times 10^9$ -cps coaxial valve by K. G. Gudkov. The Section of Semiconductor Devices, under Ye. I. Gal'perin, carried reports on tunnel diodes and transistors in pulsed and rf circuits. Participating were: Kochish Miklosh

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ACCESSION NR: AP3004953

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(Hungary), T. M. Agakhanyan, Ladislav Gavlik (Praha), V. N. Konstantinovskiy,  
S. A. Savel'yev, O. A. Chelnokov, I. N. Pusty\*nskiy, V. A. Shalimov, V. V.  
Klimov, N. A. Netsvetaylov, Yu. I. Vorontsov, I. V. Polyakov, V. Y.  
Kukushkin, N. A. Khokhlachev, K. F. Berkovskaya, V. L. Kreytser, V. A.  
Il'in, Yu. V. Koval'chuk-Ivanyuk, I. G. Nekrashevich, V. I. Loyko, I. F.  
Savitskaya, D. A. Taumin, L. A. Zubritskiy, G. P. Chursin, G. V. Bagrov,  
Ye. G. Belen'kov, and V. V. Borzeka. Orig. art. has: no figure, formula, or  
table.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i  
elektrosvyazi (Scientific and Technical Society of Radio Engineering and  
Electrocommunication)

SUBMITTED: 00

DATE ACQ: 06Sep63

ENCL: 00

SUB CODE: GE

NO REF SOV: 000

OTHER: 000

Card 4/4

L 25497-06 EWT(1)-SNA(h)

ACC NR: AP0009844

SOURCE CODE: UR/0413/66/000/004/0035/0035

AUTHOR: Stolyarov, A. K.; Naumov, I. A.

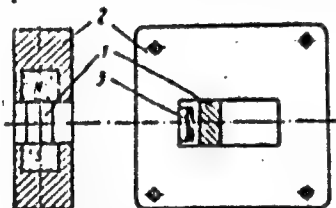
OPG: none

TITLE: A ferrite waveguide rectifier. Class 21, No. 178872

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966, 35

TOPIC TAGS: waveguide, rectification, ferrite

ABSTRACT: This Author's Certificate introduces a ferrite waveguide rectifier which contains a section of rectangular waveguide, a ferrite element and an absorbing load made in the form of a semiconductor film applied to a dielectric substrate. The overall dimensions are reduced by making this ferrite element in the form of a magnetized column which is located symmetrically with respect to the axis of the waveguide. The absorbing load is placed on the narrow wall of the rectangular waveguide opposite the ferrite element.



1--ferrite column; 2--waveguide; 3--absorber

SUB CODE: 09/

SUBM DATE: 19Apr65/

ORIG REF: 000/

OTH REF: 000

UDC: 621.372.837

1. 13842-66 BNT(1) IJP(c)

ACC NR: AP6030578

SOURCE: UR/0413/66/000/016/0058/0058

INVENTOR: Stolyarov, A. K.; Naumov, I. A.

ORG: none

TITLE: Ferrite isolator. Class 21, No. 184946

SOURCE: Izobreteniya, promyshlennyye obraztsey, tovarnyye znaki, no. 16, 1966, 58

TOPIC TAGS: rectangular waveguide, circular waveguide, waveguide element, ferrite isolator

ABSTRACT: An Author Certificate has been issued for a ferrite isolator (see Fig. 1) designed as a magnetized ferrite element asymmetrically

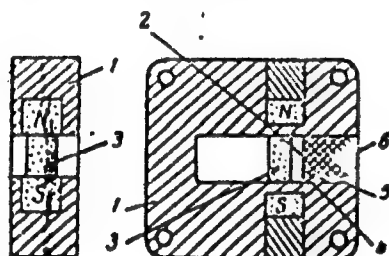


Fig. 1. Ferrite isolator

1 - Rectangular waveguide; 2 - its side wall;  
3 - ferrite element; 4 - circular waveguide;  
5 - dielectric; 6 - absorbing load.

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UDC: 621.372.853.2

REF ID: A7011775

SOBREMENNOYE SOSTOYANIYE NAUK I TEKHNIKI 1966/000/000/0053/0056

AUTHOR: Stolyarov, A. K.; Tyukov, I. P.

ORG: NONE

TITLE: Theoretical problems of three-port circulators constructed of dielectric filled waveguides

SOURCE: Vsesoyuznaya nauchnaya sessiya, posvyashchennaya Dnyu radio. 2d, 1966. Sektsiya kvantovoy elektroniki. Doklady. Moscow, 1966, 53-56

TOPIC TAGS: waveguide, wave propagation, dielectric waveguide

ABSTRACT: The precise expressions for wave propagation in a three-port circulator fabricated using dielectric filled waveguides were obtained from the solution of the diffraction problem for wave dispersion in a symmetrical H-plane waveguide junction. The following relations may be derived assuming ideal circulation conditions:

$$I_1\left(k, l, \frac{a}{\lambda}\right) = \frac{I_1(x)x}{I_1(x)} - R_1 = 0,$$

$$I_2\left(k, l, \frac{a}{\lambda}\right) = \frac{S_0(l)R_1}{\lg\left\{z_{\pm 1}^2 + |N_1(l) - N_0(l)| + \frac{\pi}{3}\right\} - L_0(l)}.$$

Card 1/2.

$$S_1(t) = \sqrt{\left(\frac{k}{\mu}\right)^2 - \left(\frac{p_1}{S_1(t)}\right)^2 + \frac{2}{\lg 60} \frac{k p_1}{\mu S_1(t)}},$$

$$\beta_{11} = \arctg \left\{ \frac{k S_1(t)}{p p_1} \times \right.$$

$$\times \left( 1 \pm \sqrt{\left[ \lg 60 - \frac{p p_1}{k S_1(t)} \right] \left[ \lg 30 + \frac{p p_1}{k S_1(t)} \right]} \right\},$$

$$x = l \sqrt{\epsilon \mu_1} = l \sqrt{\epsilon \frac{\mu^2 - k^2}{\mu}},$$

where  $S_0(t)$ ,  $L_0(t)$ ,  $H_0(t)$ ,  $S_1(t)$ ,  $L_1(t)$ ,  $H_1(t)$  depend only on the values of  $t$ , the diameter, and  $a$  is the width of the wide waveguide wall;  $2r$  is the diameter of the ferrite cylinder,  $\epsilon_\phi, \epsilon_0$  are the dielectric constants of the ferrite and the surrounding space, and  $\mu, k$  are the tensor components of ferrite permeability. The plots of energy transfer coefficients into port 2 and port 3 are given. Orig. art. has: 3 figures.

SUB CODE: 09,20/ SUBM DATE: 11Apr66/ ORIG REF: 001/ OTH REF: 001

ACC NR: A7000096

SOURCE CODE: UR/000/66/000/000/0343/0349

AUTHORS: Gushchina, Z. M.; Stolyarov, A. K.; Yabrikov, V. A.;

ORG: none

TITLE: Ferrite materials for alternating field valves

SOURCE: Vsesoyuznoye soveshchaniye po ferritam. 4th, Minsk. Fizicheskiye i fizikokhimicheskiye svoystva ferritov (Physical and physicochemical properties of ferrites); doklady soveshchaniya. Minsk, Nauka i tekhnika, 1966, 343-349

TOPIC TAGS: ferrite, magnetic property, magnetic hysteresis, magnetization curve

ABSTRACT: Several ferrite materials for use in alternating field valve installations were developed. The choice of starting materials and experimental conditions was guided by the theoretical considerations of A. L. Mikaelyan (Teoriya i primeneniye ferritov na sverkhvysokikh chastotakh. Gosenergoizdat, 1963), and the experimental conditions are tabulated. The Curie temperature, the resonance line width, and the thermal dependence of magnetization of the synthesized ferrites were determined. The experimental results are shown graphically (see Fig. 1). It is concluded that ferrites of type P-28, P-43, and M-274 are suitable materials for use in alternating field

Card 1/2

ACC NR: AT6026yy6

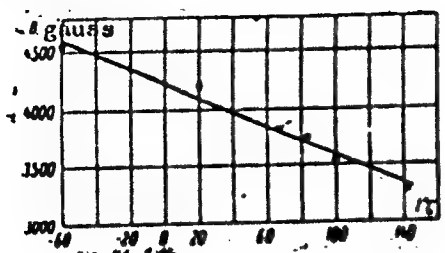


Fig. 1. Temperature dependence of magnetization of ferrite M-274

valve installations. Orig. art. has: 2 tables, 6 graphs, and 2 equations.

SUB CODE: 11/  
20/ SUBM DATE: 22Dec65/ ORIG REF: 004/ OTH REF: 002

Card 2/2

Card 1/1

L 1057-66 EWT(d)/EWA(s)-2/EAT(-)/EAT(+)/EAT(-)/EAT(+)/EAT(-)/EAT(+)/EAT(-)/EAT(+)  
EWA(c) JD/HM

ACCESSION NR: AP5022349

UR/0135/65/000/009/0015/0017  
621.791.75.01.004.5

AUTHOR: Pankov, I. S. (Engineer); Stolyarov, A. P. (Engineer) 486

TITLE: Remote control systems for monitoring the movement of the welding arc along the weld line 10.7.6

SOURCE: Svarochnoye proizvodstvo, no. 9, 1965, 15-17

TOPIC TAGS: remote control system, arc welding, selsyn, time relay, time optimal control, closed circuit TV, automatic welding

ABSTRACT: Three possible solutions of the problem of enabling the operator at the control panel to monitor and correct the position of the welding arc relative to the weld line are presented with respect to the welding of circular shell seams. Solution 1: a selsyn system transmitting arc readings from the weldment and welding machine to the remote control panel. Solution 2: welding based on time reckoning by means of electric coupling, where time begins to be reckoned with the initial instant of arc excitation. Solution 3: welding with visual observation of welding zone by means of closed-circuit tele-

Card 1/2

L 1041

ACCESSION NR: AP5022349

vision. These three monitoring systems were tested only for the case of the welding of circular seams. No experience has as yet been gained in employing them in the rectilinear butt welding of sheets, but such an utilization of these systems is in principle possible. Furthermore this will make possible the further automation of welding operations: for example, in the monitoring system based on time reckoning the time relay may, owing to feedback to the automatic welding machine, be utilized to automate the operations of disconnection of the systems on completion of welding. Orig. art. has: 5 figures, 2 tables.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: IE

NO REF SOV: 003

OTHER: 000

Card

2/2 JP

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Call center services in the U.S. 11/11/12, 12/12/12, 12/13/12, 12/14/12, 12/15/12, 12/16/12, 12/17/12, 12/18/12, 12/19/12, 12/20/12, 12/21/12, 12/22/12, 12/23/12, 12/24/12, 12/25/12, 12/26/12, 12/27/12, 12/28/12, 12/29/12, 12/30/12, 12/31/12, 1/1/13, 1/2/13, 1/3/13, 1/4/13, 1/5/13, 1/6/13, 1/7/13, 1/8/13, 1/9/13, 1/10/13, 1/11/13, 1/12/13, 1/13/13, 1/14/13, 1/15/13, 1/16/13, 1/17/13, 1/18/13, 1/19/13, 1/20/13, 1/21/13, 1/22/13, 1/23/13, 1/24/13, 1/25/13, 1/26/13, 1/27/13, 1/28/13, 1/29/13, 1/30/13, 1/31/13, 2/1/13, 2/2/13, 2/3/13, 2/4/13, 2/5/13, 2/6/13, 2/7/13, 2/8/13, 2/9/13, 2/10/13, 2/11/13, 2/12/13, 2/13/13, 2/14/13, 2/15/13, 2/16/13, 2/17/13, 2/18/13, 2/19/13, 2/20/13, 2/21/13, 2/22/13, 2/23/13, 2/24/13, 2/25/13, 2/26/13, 2/27/13, 2/28/13, 2/29/13, 3/1/13, 3/2/13, 3/3/13, 3/4/13, 3/5/13, 3/6/13, 3/7/13, 3/8/13, 3/9/13, 3/10/13, 3/11/13, 3/12/13, 3/13/13, 3/14/13, 3/15/13, 3/16/13, 3/17/13, 3/18/13, 3/19/13, 3/20/13, 3/21/13, 3/22/13, 3/23/13, 3/24/13, 3/25/13, 3/26/13, 3/27/13, 3/28/13, 3/29/13, 3/30/13, 3/31/13, 4/1/13, 4/2/13, 4/3/13, 4/4/13, 4/5/13, 4/6/13, 4/7/13, 4/8/13, 4/9/13, 4/10/13, 4/11/13, 4/12/13, 4/13/13, 4/14/13, 4/15/13, 4/16/13, 4/17/13, 4/18/13, 4/19/13, 4/20/13, 4/21/13, 4/22/13, 4/23/13, 4/24/13, 4/25/13, 4/26/13, 4/27/13, 4/28/13, 4/29/13, 4/30/13, 5/1/13, 5/2/13, 5/3/13, 5/4/13, 5/5/13, 5/6/13, 5/7/13, 5/8/13, 5/9/13, 5/10/13, 5/11/13, 5/12/13, 5/13/13, 5/14/13, 5/15/13, 5/16/13, 5/17/13, 5/18/13, 5/19/13, 5/20/13, 5/21/13, 5/22/13, 5/23/13, 5/24/13, 5/25/13, 5/26/13, 5/27/13, 5/28/13, 5/29/13, 5/30/13, 5/31/13, 6/1/13, 6/2/13, 6/3/13, 6/4/13, 6/5/13, 6/6/13, 6/7/13, 6/8/13, 6/9/13, 6/10/13, 6/11/13, 6/12/13, 6/13/13, 6/14/13, 6/15/13, 6/16/13, 6/17/13, 6/18/13, 6/19/13, 6/20/13, 6/21/13, 6/22/13, 6/23/13, 6/24/13, 6/25/13, 6/26/13, 6/27/13, 6/28/13, 6/29/13, 6/30/13, 7/1/13, 7/2/13, 7/3/13, 7/4/13, 7/5/13, 7/6/13, 7/7/13, 7/8/13, 7/9/13, 7/10/13, 7/11/13, 7/12/13, 7/13/13, 7/14/13, 7/15/13, 7/16/13, 7/17/13, 7/18/13, 7/19/13, 7/20/13, 7/21/13, 7/22/13, 7/23/13, 7/24/13, 7/25/13, 7/26/13, 7/27/13, 7/28/13, 7/29/13, 7/30/13, 7/31/13, 8/1/13, 8/2/13, 8/3/13, 8/4/13, 8/5/13, 8/6/13, 8/7/13, 8/8/13, 8/9/13, 8/10/13, 8/11/13, 8/12/13, 8/13/13, 8/14/13, 8/15/13, 8/16/13, 8/17/13, 8/18/13, 8/19/13, 8/20/13, 8/21/13, 8/22/13, 8/23/13, 8/24/13, 8/25/13, 8/26/13, 8/27/13, 8/28/13, 8/29/13, 8/30/13, 8/31/13, 9/1/13, 9/2/13, 9/3/13, 9/4/13, 9/5/13, 9/6/13, 9/7/13, 9/8/13, 9/9/13, 9/10/13, 9/11/13, 9/12/13, 9/13/13, 9/14/13, 9/15/13, 9/16/13, 9/17/13, 9/18/13, 9/19/13, 9/20/13, 9/21/13, 9/22/13, 9/23/13, 9/24/13, 9/25/13, 9/26/13, 9/27/13, 9/28/13, 9/29/13, 9/30/13, 10/1/13, 10/2/13, 10/3/13, 10/4/13, 10/5/13, 10/6/13, 10/7/13, 10/8/13, 10/9/13, 10/10/13, 10/11/13, 10/12/13, 10/13/13, 10/14/13, 10/15/13, 10/16/13, 10/17/13, 10/18/13, 10/19/13, 10/20/13, 10/21/13, 10/22/13, 10/23/13, 10/24/13, 10/25/13, 10/26/13, 10/27/13, 10/28/13, 10/29/13, 10/30/13, 10/31/13, 11/1/13, 11/2/13, 11/3/13, 11/4/13, 11/5/13, 11/6/13, 11/7/13, 11/8/13, 11/9/13, 11/10/13, 11/11/13, 11/12/13, 11/13/13, 11/14/13, 11/15/13, 11/16/13, 11/17/13, 11/18/13, 11/19/13, 11/20/13, 11/21/13, 11/22/13, 11/23/13, 11/24/13, 11/25/13, 11/26/13, 11/27/13, 11/28/13, 11/29/13, 11/30/13, 12/1/13, 12/2/13, 12/3/13, 12/4/13, 12/5/13, 12/6/13, 12/7/13, 12/8/13, 12/9/13, 12/10/13, 12/11/13, 12/12/13, 12/13/13, 12/14/13, 12/15/13, 12/16/13, 12/17/13, 12/18/13, 12/19/13, 12/20/13, 12/21/13, 12/22/13, 12/23/13, 12/24/13, 12/25/13, 12/26/13, 12/27/13, 12/28/13, 12/29/13, 12/30/13, 12/31/13, 1/1/14, 1/2/14, 1/3/14, 1/4/14, 1/5/14, 1/6/14, 1/7/14, 1/8/14, 1/9/14, 1/10/14, 1/11/14, 1/12/14, 1/13/14, 1/14/14, 1/15/14, 1/16/14, 1/17/14, 1/18/14, 1/19/14, 1/20/14, 1/21/14, 1/22/14, 1/23/14, 1/24/14, 1/25/14, 1/26/14, 1/27/14, 1/28/14, 1/29/14, 1/30/14, 1/31/14, 2/1/14, 2/2/14, 2/3/14, 2/4/14, 2/5/14, 2/6/14, 2/7/14, 2/8/14, 2/9/14, 2/10/14, 2/11/14, 2/12/14, 2/13/14, 2/14/14, 2/15/14, 2/16/14, 2/17/14, 2/18/14, 2/19/14, 2/20/14, 2/21/14, 2/22/14, 2/23/14, 2/24/14, 2/25/14, 2/26/14, 2/27/14, 2/28/14, 2/29/14, 3/1/14, 3/2/14, 3/3/14, 3/4/14, 3/5/14, 3/6/14, 3/7/14, 3/8/14, 3/9/14, 3/1

1. Ysere v. Ysere - since 1961 - Y's liability in tort for negligence.

MERLIN, R.L.; MOROZOVA, V.G.; STOLYAROV, A.S.

Biostratigraphy of Maikop deposits in southern Mangyshlak.  
Dokl.AN SSSR 133 no.3:653-656 J1 '60. (MIRA 13:7)

1. Vsesoyuznyy institut mineral'nogo syr'ya. Predstavleno  
akademikom A.L.Yanshinym.  
(Mangyshlak Peninsula--Paleontology, Stratigraphic)

KOCHENOV, A.V.; STOLIAROV, A.S.

Some forms of iron sulfide segregation in the cross section  
of Maikop deposits of southern Mangyshlak. Dokl.AN SSSR  
133 no.6:1412-1415 Ag '60. (MIRA 13:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo  
syr'ya. Predstavleno akad. N.M.Strakhovym.  
(Mangyshlak Peninsula--Iron sulfides)

STOLYAROV, A.S.; SHLEZINGER, A.Ye.

Tectonics and basic characteristics of the development of the  
structural plan in the South Mangyshlak Plateau. Biul. MOIP.  
Otd.geol. 37 no.3:3-26 My-Je '62. (MIRA 15:10)  
(Mangyshlak Peninsula—Geology, Structural)

MERKLIN, R.L.; STOLIYAROV, A.S.

Solenoy horizon of the western Kopet-Dag. Biul.MDIP.Otd.geol.  
37 no.5:61-68 S-O '62. (MIRA 15:12)  
(Kopet-Dag—Paleontology, Stratigraphic)

KOZYAR, L.A.; STOLYAROV, A.S.

Palynological foundation of the stratigraphic breakdown of  
the Malkop deposits of southern Mangyshlak. Dokl.AN SSSR 144  
no.4:882-885 Je '62. (MIRA 15:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo  
syr'ya. Predstavleno akademikom A.L.Yanshinym.  
(Palynology) (Mangyshlak Peninsula—Geology, Stratigraphic)

NAGORSKIY, M.P.; SANDANOV, I.B.; STOLYAROV, A.S.

Eocene sediments in the margins of the Tom'-Kolyvanskaya fold zone and  
minerals associated with them. Trudy SNIIGGIMS no.25:103-108 '62.  
(MIRA 16:4)

(Siberia—Geology)

007/96-59-3-4/21

AUTHORS: Zaks, A.L., Candidate of Technical Sciences  
Stolyarov, A.V., Engineer

TITLE: Steam-Gas Condensing Power Stations and Their Comparative  
Thermal Efficiencies (Parogazovyye kondensatsionnyye  
elektrostantsii i ikh sravnitel'naya teplovaya  
effektivnost')

PERIODICAL: Teploenergetika, 1959, Nr 3, pp 19-25 (USSR)

ABSTRACT: It is timely to consider the most efficient way of using  
gas as a power-station fuel. Stations may operate with  
gas turbines, with steam turbines or with a combination  
of the two. So far a procedure for comparing these  
types of power station has not been formulated.  
Fundamentally, the combined station consists of a steam  
boiler and gas-turbine combustion chamber as a single  
unit: a high-pressure steam generator operates on the  
gas side under a pressure set up by the compressors of  
the gas-turbine set. With this method of operation, the  
heating surfaces are small and much less than the normal  
amount of metal is required. In the steam generator the  
amount may be only 0.55 - 0.70 kg/kg steam, i.e. a quarter  
of that in an ordinary boiler. In comparing a gas-fired

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NOV/98-59-5-4/21

## Steam-Gas Condensing Power Stations and Their Comparative Thermal Efficiencies

steam station and a combined station (without intermediate cooling of the compressors in the gas-turbine group), it is assumed that with equal excess air factors and equal initial steam conditions an equal quantity of fuel is consumed in both stations. Then if the outlet gas temperatures are equal, the associated losses are also equal. A comparison is then made between the thermal efficiencies of a gas-fired steam station, a gas-turbine installation and a combined steam-gas installation, the schematic diagram of which is given in Fig.1. This installation consists of a gas-turbine group, a condensing-type steam turbine, a high-pressure steam generator and regenerators. The gas and air are compressed in the compressors of the gas-turbine stage and after heating in the regenerators are delivered to the steam generator, which serves also as the combustion chamber of the gas turbine. The combustion products are used successively as heat-transfer medium for steam raising and as working substance for the gas-turbine installation. The steam

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DOV/96-59-3-4/21

# Steam-Gas Condensing Power Stations and Their Comparative Thermal Efficiencies

generator reduces the temperature of the combustion product to a value suitable for the gas turbine. After the combustion products have expanded in the gas turbine and passed through the regenerators they are discharged to atmosphere. The thermal circuit of the steam stage is normal. Comparative thermal efficiencies of the three types of station are then calculated. The ratio between the outputs of the gas turbine and the steam turbine affects the thermal efficiency in the manner plotted in Fig.2. A general comparison of the thermal efficiencies of the three types of station for different conditions is seen in Tables 1 and 2. Table 2 compares a combined and a gas-turbine station for different ratios of heat consumption in the steam- and gas-turbines. The procedure described above was used to make a general evaluation of the thermal efficiency of a combined station. The influence of individual parameters of the cycle on the efficiency were considered. The particular factors discussed included: the excess-air factor; the use of higher steam conditions and the use of a more efficient

Card 3/5

NOV/96-59-3-4/21

Steam-Gas Condensing Power Stations and their Comparative Thermal Efficiencies

gas stage. Calculated values of efficiency for combined steam-gas stations are plotted in Figures 6 and 7. The calculations relate to gas obtained by underground gasification of coal. The conditions assumed in the calculation are stated. The graphs may be used to compare the efficiencies of steam, gas and combined stations for different steam conditions and gas-turbine operating conditions. The curves in Fig.8 show the range of efficiency of combined and gas-turbine stations. It is concluded that in the combined station, the greatest fuel economy results from the use of medium and high initial steam conditions; also that the thermal efficiency of the combined steam-gas systems is then higher than that of a gas-fired steam station. The range in which the combined station is most efficient is somewhat extended when heat is delivered to the gas stage in two steps. Combined installations give higher fuel economy than gas turbines having low inlet temperatures. The output of combined stations is

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SOV/96-59-3-4/21

Steam-Gas Condensing Power Stations and Their Comparative Thermal Efficiencies

governed by the unit output of the steam stage and their use will be most effective in power stations of small and medium output. There are 8 figures, 2 tables and 1 Soviet reference.

ASSOCIATION: Moskovskiy inzhenerno-stroitel'nyy institut (Moscow Civil Engineering Institute); Energeticheskoy Institut Ak. SSSR (Power Institute Ac.Sc. USSR)

Card 5/5

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Constitution - ... ..

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Part 1: List of Russian... .. October 1952. UNCLASSIFIED.

"The Effect of Certain Procedures for Seeding Carrot Seed on the Seed and Species Quality of the Seedlings." Land Agr Sci, Gorkiy Agricultural Inst, Agr Culture USSR, Gorkiy, 1973. (IL, No 10, Mar 5.)

So: Sum. No 670, 2/ Sept 95 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (15)

BERMAN, L.D., doktor tekhnicheskikh nauk; STOLYAROV, B.M., izzhener.

Experimental data on the effect of a flow of substance on the heat  
and mass exchange during condensation. Teploenergetika 4 no.1:49-52  
Ja '57. (MLRA 10:3)

(Condensation) (Steam flow)

GRISHUK, I.K., kand.tekhn.nauk; STOLYAROV, B.M., inzh.

Investigation into the operation of bubble plates.  
Teploenergetika no.4:67-72 Ap '60. (MIRA 13:8)

1. Vsesoyuznyy teplotekhnicheskiy institut.  
(Feed-water purification) (Plate towers)

STOLYAROV, B.M., inzh.; SHMIGOL', I.N., inzh.

Determining capability of the condenser of the K-150-130 KhTGZ  
turbine. Teploenergetika 10 no.8:16-19 Ag '63. (MIRA 16:8)

1. Vsesoyuznyy teplotekhnicheskiy institut.  
(Condensers (Steam)) (Steam turbines)

STOLIANOV, B.M.

Protection from corrosion of the components of deaerator systems.  
Energetik 11 no.9:25-26 S '63. (MIRA 16:10)

STOLYAROV, D.M.

Causes leading to decreased efficiency in the removal of free carbon dioxide from feed water at low values of bicarbonate alkalinity. Energetik 11 no. 10:11-15 0 '63. (MIRA 16:11)

STOLYAROV, B.M., 1944.

Testing of the BKZ deaerator with 400 ton/hour productive  
capacity. Elek. sta. 34 no.7:2-4 J1 '63. (MIRA 16:8)

STONY, G., B.N., Inza.; CHINCHI, I.N., Inza.

Redesigning of 1SP-400 generation column. Flex. sta. 36 no.1:  
32-36 Ja '65. (HBA 18:3)

S/C80/61/034/012/012/017  
D243/D305

AUTHOR: Stolyarov, B.V.

TITLE: Application of the infrared spectroscopy method to the study of the oxidation of compounds of high molecular weight

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 12, 1961, 2726 - 2732

TEXT: The author surveys and summarizes the literature published over the last fifteen years on the application of infrared spectroscopy to studying the oxidation of compounds of high molecular weight, such as rubbers and plastics. This method clarified the details of the various stages of oxidation, especially with regard to the intermediate products formed - peroxides, hydroperoxides etc. - and the linkages which occur eg. double bond and  $\alpha$ -methyl mechanisms. The kinetic method of studying infrared spectral changes is referred to. Radiation action on plastics, thermal oxidation, photo-oxidation, as well as the action of oxidation inhibi-

Card 1/2

IOFFE, B.V.; STOLYAROV, B.V.

Isomerization during the sulfuric acid alkylation of benzene  
by alcohols. Zhur.ob.khim. 32 no.10:3452-3453 0 '62.  
(MIRA 15:11)

1. Leningradskiy gosudarstvennyy universitet.  
(Benzene) (Alkylation) (Isomerization)

STOLYAROV, B.V.; YAKUSHEVA, V.I.

Casting of aluminum alloy fittings. Lit. proizv. no.8:36 Ag  
'62, (MIRA 15:11)

(Aluminum founding)

L 13574-63

EMP(j)/EPT(c)/ENT(m)/BDS Pc-4/Pr-4 RM/WW

ACCESSION NR: AP3000188

S/0080/63/036/004/0870/0875 65

64

AUTHOR: Subbotin, S. A.; Zy\*kova, S. K.; Stolyarov, B. V.

TITLE: Investigation of inhibited oxidation of octene-2 with molecular oxygen in the presence of 2,6-ditertiary butyl-4-methyl phenol (ionol) 1.

SOURCE: Zhurnal prikladnoy khimii, v. 36, no. 4, 1963, 870-875

TOPIC TAGS: octene-2, ionol

ABSTRACT: Oxidation reactions were run on octene-2 with molecular O in continuously circulating systems at 80 and 100 degrees with and without antioxidant to explain reaction mechanism, determine activation energy and equilibrium kinetics, and to investigate the behavior of the antioxidant. In the oxidation of octene-2, the O is added at the double bonds and at the C-atom in the alpha-methyl position with respect to the double bond. Activation energy equals 23.3 kcal per mol. The oxidation products are the bright orange stilbene quinoid type compounds, stilbene quinone, and stilbene hydroquinone. Ionol (2,6-ditertiary butyl-4-methyl phenol) decreases, and in the proportion of 5% inhibits the induction of oxidation for a substantial time;

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L 13574-63

ACCESSION NR: AP3000188

if it is added after oxidation is in progress, it has no significant effect on the subsequent oxidation process. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: Vsesoyuzny'y nauchno-issledovatel'skiy institut sinteticheskogo kauchuka imeni S. V. Lebedeva (All-Union Scientific-Research Institute for Synthetic Rubber)

SUBMITTED: 25Nov61

DATE ACQ: 12Jun63

ENCL: 00

SUB CODE: CH

NO REF SOV: 011

OTHER: 012

Card 2/2

SUBBOTIN, S.A.; ZYROVA, S.K.; STOLYAROV, B.V.

Effect of the products of the transformation of 2,6-ditert-butyl-4-methylphenol (ionol) on the process of the oxidation of 2-octene.  
Zhur. prikl. khim. 36 no.4:875-881 Ap '63. (MIRA 16:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo  
kauchuka imeni S.V. Lobedeva.  
(Cresol) (Octene) (Oxidation)

10175 10.11; 10111.11, 11.

quantitative analysis of content of 10.11-10.1111-10.1111  
by the method of gas-liquid chromatography. Methods of analysis 2 no. 11  
911-917 11-11 11. (11.11.11.11)

1. Leningr. Inst. Universitet 11. 11.11. 11.11.11.

IOFFE, B.V.; STOLYAROV, B.V.

Physicochemical properties of isomeric pentylbenzenes. Neftokhimiya  
4 no.3:361-366 My-Je '64. (MIRA 1811)

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alkylation. Dokl. AN SSSR vol. no. 1339-1341 Ap '66. (MIRA 12:5)

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Submitted September 25, 1966.

1

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B.V., red.

[Atlas of the ultraviolet absorption spectra of sub-  
stances used in the production of synthetic rubbers]  
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[Vibrational spectra and molecular processes in rubber]  
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tut sinteticheskogo kauchuka.



VDOVTSOVA, Ye.A., kandidat khimicheskikh nauk; TSUKERYANIK, I.P., professor, otvetstvennyy redaktor; SARYMSAKOV, T.A., glavnyy redaktor; RYZHOV, S.M., professor-doktor, zamestitel' glavnogo redaktora; ROMANOVSKIY, V.I., redaktor; KOROVIN, Ye.P., redaktor; MASSON, M.Ye., redaktor; KORZHENEVSKIY, N.L., redaktor; POPOV, V.I., professor-doktor, redaktor; MIROSHKINA, M.M., professor, redaktor; STOLYAROV, D.D., dotsent, redaktor; BONDARENKSKIY, G.L., dotsent, redaktor; KRASNOVAYEV, I.M., dotsent, redaktor; GENTSHKE, L.V., dotsent, redaktor

[Radical and ionic alkylation of aromatic compounds] Radikal'nyi i ionnyi mekhanizmy reaktsii alkilirovaniia aromaticheskikh soedinenii. Brevan, Izd-vo Brevanskogo universiteta, 1953. 92 p. (Tashkent. Universitet. Trudy Srednesiatskogo gosudarstvennogo universiteta. no.4). Khimicheskie nauki, no.6)

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Division of forests into groups and according to the designated purpose in Leningrad Province. Nauch. trudy LTA no.99:  
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DROZD, M.S.; STOLYAROV, G. Ya.

Certain regularities in the dynamic hardness of steel. Izv. vys.  
ucheb. zav.; Chern. met. 7 no. 7:176-182 '64 (MIRA 17:8)

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STOLYAROV, G.A.

801-202

4095 SECRET-2410(19.1) (161-6)  
METHOD OF MEASUREMENT OF THE FAST-NEUTRON  
MULTIPLICATION FACTOR IN URANIUM-WATER  
SYSTEMS. G. A. Stolyarov, I. V. Komissarov, V. P.  
Korobov, and V. A. Mikhlin (Nikol'skii). p.161-6 of  
CONFERENCE OF THE ACADEMY OF SCIENCES OF THE  
USSR ON THE PEACEFUL USES OF ATOMIC ENERGY,  
JULY 1-5, 1964. SESSION OF THE DIVISION OF PHYSICAL  
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This paper is a translation of the original from the Russian  
and appeared in the English translation of the original.

4  
PML 202

STOLYAROV, ~~STOLYAROV~~ G. A.

Method of measuring the fast neutron multiplication factor in uranium-water lattices. G. A. Stolyarov, I. V. Konyukhov, V. P. Kalkov, and Yu. V. Nikol'skiy. *Atm. Nauk S.S.S.R. For Atomic Energy (Energiya Atomnoy Energii, Zashchita Otd. Fiz.-Mat. Nauk)* 1955, 217-24 (English summary, 225).—Measurements for  $k$  are given for a U-H<sub>2</sub>O lattice of 34 X 34 X 50 cc. (cylindrical blocks of U, ordinary H<sub>2</sub>O) in a U-graphite reactor and for experimental U-H<sub>2</sub>O reactors. The measurements agree well with each other. The following formula is valid  $k = 1 + [N_{238} / (N_{238} - 1 - (Z_c/Z_f) / N_{238} r_{238})]$ , where  $N_{238}/N_{235}$  is the ratio of the fission nos. for the nuclei U<sup>238</sup> and U<sup>235</sup> and  $r_{238}$  and  $r_{235}$  are the nos. of fast neutrons arising in the fission of the nuclei U<sup>238</sup> and U<sup>235</sup>, resp.  $Z_c/Z_f$  is the mean ratio of radiation capture and fission cross sections for U<sup>238</sup>. Two methods for detg.  $N_{238}/N_{235}$  are presented. In one method fragments are collected on paper disks, in the other method an ionization chamber is used for counting of the fragments. In both methods layers of natural U and U low in U<sup>238</sup> are used, which are placed in a slot of the U of the lattice, and the activities are compared. Werner Jacobson

NU

Box 2m  
(2)

A. V. Kiselev, V. A. Kiselev, V. I. Kiselev, I. Ya. Kiselev, . Ye., and  
"Kiselev, V. I."

"Theory of Resonance Absorption in Heterogeneous Systems".

Report appearing in 1st Volume of "Session of the Academy of Sciences of USSR  
on the Peaceful use of Atomic Energy, 1-5 July", Publishing House of Academy of  
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30: Sum 728, 29 Nov 1955.

5101 Y D R O U G. A.

USSR

75137

ON THE SPONTANEOUS FISSION OF THORIUM. A. V. Podgurskaya, V. I. Kalashnikova, G. A. Solov'ev, E. D. Vorob'ev, and G. N. Merov. Zhur. Eksptl. i Teoret. Fiz. 28, 563-5 (1955) Apr. (In Russian)

The value  $1.4 \times 10^8$  yr for the half life for spontaneous fission of Th given by Segre (Phys. Rev. 88, 21, 1952) is considered too low because of inadequate correction for cosmic radiation and the presence of transuranic elements. The authors' experiments suggest that the probability of spontaneous fission is extremely small and that the half life is greater than  $10^{10}$  yr. (G.V.)

3  
62

C-5

Category : USSR/Nuclear Physics - Nuclear Reactions

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 558

Author : Katkov, V.P., Nikol'skiy, Yu.V., and Stolyarov, G.A.

Title : Determination of the Ratio of the Average Fission Cross Sections of Pu239 and U235 in Uranium-Water Lattice Blocks

Orig Pub : Atom. energiya, 1956, No 3, 61-64

Abstract : The ratio of the average fission cross sections of Pu<sup>239</sup> and U<sup>235</sup> was determined in uranium-water lattices of natural uranium and ordinary water. For the sake of comparison, this ratio was measured for a uranium-graphite reactor. It is established that the ratio  $\sigma_{f-}^{\text{Pu}}/\sigma_{f-}^{\text{U}}$  for uranium-water lattices with a spacing of 45, 50, 55, and 60 mm, and for uranium-graphite reactor with a lattice spacing of 200 mm are equal to 2.24, 1.99, 1.88 and 1.79 respectively.

Card : 1/1



1 (1)

AUTHORS: Berezin, A. A., Stolyarov, G. ~~Stolyarov~~ DOV/89-5-6-16/25  
Nikol'skiy, Yu. V., Chelnokov, I. Ye.

TITLE: Fission Cross Section of  $U^{235}$  and  $Th^{232}$  for Neutrons With an Energy of 14.6 MeV (Secheniye deleniya  $U^{235}$  i  $Th^{232}$  neytronami s energiyey 14.6 Mev)

PERIODICAL: Atomnaya energiya, 1959, Vol 5, Nr 6, pp 659-660 (USSR)

ABSTRACT: The fission cross section of  $U^{235}$  was measured from the ratio

$$\frac{\sigma_f(U^{235})}{\sigma_f(U^{238})}$$

for neutrons of equal energy. The ionization chambers, which contained  $U^{235}$  and  $U^{238}$ , were, one after another, subjected to irradiation by neutrons (d-t-reaction; ion acceleration tube.  $E_d = 140$  keV. Angle between ionization chamber and deuteron beam  $0^\circ$ ). Both chambers were connected with the same linear amplifier with constant impulse threshold value. The ionization chambers had thin walls. The external cylindrical electrode (diameter 2.5 cm) consisted of a platinum foil.

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Fission Cross Section of  $U^{235}$  and  $Th^{232}$  for Neutrons 307/82-5-6-16/25  
With an Energy of 14.6 MeV

On to the inner surface of the foil an uranium layer was electrolytically applied (the layer in the first chamber was of natural uranium, that in the second chamber contained 97 % enriched  $U^{235}$ ). Length of the layer: 6.5 cm; surface density: natural uranium  $\sim 2 \text{ mg/cm}^2$ ,  $U^{235} \sim 0.5 \text{ mg/cm}^2$ .

The chambers were housed in a graphite prism (60.60.70  $\text{cm}^3$ ). There was also a Po-Re-neutron source which was surrounded by 4 cm of paraffin. In connection with other measurements, a tritium target (ion accelerator tube) was used as a neutron source. As monitor, a proportionality counter was used, which counted the  $\alpha$ -particles of the reaction  $T(d,n)He^4$ . In order to suppress the scattered neutrons, the chamber was surrounded by a  $Cl$ -sheet of 1 mm thickness and by boron carbide of 10 cm thickness.

After carrying out some minor corrections

$$\frac{\sigma_f(U^{235})}{\sigma_f(U^{238})} = 2.03 \pm 0.09$$

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Fission Cross Section of  $U^{235}$  and  $Th^{232}$  for Neutrons      SO7/89-5-6-16/25  
With an Energy of 14.6 MeV

was obtained.

By using  $\sigma_f(U^{238})$  for 14.6 MeV neutrons (according to reference 2),  $\sigma_f(U^{235}) = 2.50 \pm 0.15$  b was obtained.

The fission cross section for  $Th^{232}$  was measured by means of an ionization chamber (for the arrangement of the apparatus see reference 2). The thorium layer precipitated on platinum (Ref 1) had a surface density of  $\sim 0.5$  mg/cm<sup>2</sup> and contained  $6.6 \pm 0.5$  mg Th.  $\sigma_f(Th^{232})$  was measured as amounting to  $0.37 \pm 0.02$  b. This result agrees well with the data of reference 3.

The results were discussed with N. N. Plerov. There are 3 references, 2 of which are Soviet.

SUBMITTED:      August 7, 1958

Card 3/3

21(7)  
**AUTHORS:** Plesner, S., E. K. Lohmeyer, V. L., *Polymers*, 1964, 1, 1.  
 Verbitsky, B. D., Stolyar, S. A.  
**TITLE:** Spectrum of High Energy in Cosmic Rays "Strongly Relativistic  
 Energy" (Kosmicheskiye Luchy)  
**PERIODICAL:** Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1964,  
 Vol. 36, No. 3, pp. 727-734 (733)  
**ABSTRACT:** In 1945 Plesner and Stolyar discovered that by cosmic radiation  
 time nuclear fission may be caused in the case of operation  
 and therefore, in the neutron, a number of experimental investigations  
 were carried out for the purpose of determining the  
 that cosmic radiation component which is responsible for  
 fission on heavy nuclei. This was also the time to be performed  
 by the present paper. The authors used multi-layer  
 ionization chambers to detect the effect of heavy nuclei fission  
 on cosmic rays. They investigated the altitude dependence  
 of fission in altitude of 4700, 1940 and 2100 m above sea  
 level (Plesner, A. - 23) and 120 m above sea level (A. - 23).  
 Figure 1 shows the calculated and measured dependence of the  
 intensity of the fissioning component on altitude. The curves  
 show a practically linear decrease of fission frequency with

Card 1/3

**Spectrum of High Energy in Cosmic Rays** 807/56-16-1-19,71  
 increasing atmospheric density, i.e., fission frequency increases  
 linearly with altitude. Actually, fission occurs rarely, 1 - 2  
 fissions per g of thorium within 24 hours. Further investigations  
 deal with the angular distribution of the fissioning  
 component. These investigations were carried out at 3500 m  
 above sea level (Plesner). Research results are shown in form  
 of a diagram (Fig. 2) where they are compared with the calculated  
 curve. The two curves differ essentially from each other. Further  
 investigations concern the energy and momentum balance.  
 The authors also investigated the range of fissioning component  
 in air in consideration of the atomic weight of the absorber  
 and the thickness of the absorber.

	thickness of absorber g/cm <sup>2</sup>	experimental results	calculated results
Graphite	119 (120)	410±22	190
"	134 (144)	352±55	190
"	177 (200)	240±30	190
"	195 (207)	410±80	190
Aluminum	150 (210)	340±10	190
"	300 (240)	350±85	190

Card 2/3

**Spectrum of High Energy in Cosmic Rays**  
 The values in brackets are obtained if the air is taken as  
 the absorber is taken into account. In the case of heavy  
 nuclei fission, the latter is taken to be equal to 1.0  
 nuclear component of cosmic radiation. The authors finally  
 then the energy of the fissioning component is 4.233  
 MeV. The authors (Plesner) have the energy of fissioning  
 component, with some statistical error, of 4.233 MeV. The  
 in the altitude was about 100 m above sea level. The  
 acceleration is 1.7. The value for the fissioning component  
 are 1.7, 1.7, 1.7, and 1.7 before the fissioning  
 are 1.7, 1.7, 1.7, and 1.7.

807/56-16-1-19,71

Card 3/3

L 15886-66 EWT(1)/EWT(m)/EEC(k)-2/ETC(f)/EWO(m)/T/ENP(t)/EWA(h) IJP(o)

ACC NR: AT6002495

SOURCE CODE: UR/3136/65/000/950/0001/0006

TT/JD/WW/JO/AT

AUTHOR: Kravchenko, Yu. Ya.; Stolyarov, G. A.

ORG: Institute of Atomic Energy im. I. V. Kurchatov, Moscow (Institut atomnoy energii)

TITLE: Some data on the operation of a thermoemissive transducer, with additional ionization

SOURCE: Moscow. Institut atomnoy energii. Doklady, IAE-950, 1965. Nekotoryye dannyye po issledovaniyu raboty termoemissionnogo preobrazovatelya s dopolnitel'noy ionizatsiyey, 1-6

TOPIC TAGS: diode electron tube, cesium electron tube, volt ampere characteristic, molybdenum

ABSTRACT: The possibility of creating a low-temperature thermoemissive transducer for converting heat energy into electric energy is analyzed. Experimental data are presented on the effect of additional ionization on the shorting current and specific power of a cesium diode. An attempt was made to construct a transducer with the maximum specific power at the lowest possible cathode temperature by using molybdenum as the cathode material (this metal has a small thermal-neutron Card 1/2

L 15886-66

ACC NR: AT6002495

capture cross section). A molybdenum filament was placed in the gap between the cathode and anode and heated with a half-wave current. The experiments were carried out under the following conditions: (1) cathode temperature from 650 to 1340C; (2) cesium temperature from 190 to 290C; (3) filament temperature up to 1640C; (4) anode temperature about 600C. The volt-ampere characteristics were determined. An elementary calculation of the diffusion of ions from the filament showed that the single filament used in this work does not provide a significant compensation of the space charge, and hence, does not produce maximum power. A large number of filaments will be used in future experiments in order to increase the power. Orig. art. has: 3 figures.

SUB CODE: 07, 09/ SUM DATE: none

Card 2/2

ROTOV, I.V., kand. veterinarnykh nauk; STOLYAROV, G.F., veterinarnyy vrach

Postvaccinal immunobiologic activity of the blood of cattle  
in brucellosis. Veterinariia 38 no.9:23-25 S '61.  
(MIRA 16:8)

1. Dal'nevostochnyy nauchno-issledovatel'skiy veterinarnyy  
institut.

LEVIN, M.S., kand.tekhn.nauk; MURADYAN, A.Ye., kand.tekhn.nauk; STOLYANOV,  
G.K., inzh.; KHOTYASHOV, E.N., inzh.

Electric and economic calculations of rural networks with  
electronic calculating machines. Mekh.i elek.sots.sel'khoz. 19  
no.5:45-49 '61. (MIRA 14:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut elektrifikatsii  
sel'skogo khozyaystva (for Levin, Muradyan).  
(Electronic calculating machines)  
(Electricity in agriculture)

L 36829-66 EWT(d)/EWP(1) IJF(c) GO/BB

ACC NR: AP6017929

SOURCE CODE: UR/0378/66/000/002/0057/0102

AUTHOR: Korolev, M. A.; Kuz'min K. S.; Lavrov, S. S.; Letichevskiy, A. A.;  
Stolvarov, G. K.; Shura-Bura, M. R.

ORG: None

TITLE: Report on the ALGEK algorithmic language 196

SOURCE: Kibernetika, no. 2, 1966, 57-102

TOPIC TAGS: algorithmic language, economics, information processing, computer application, machine translation

ABSTRACT: This paper presents a description of an algorithmic language termed ALGEK (algorithmic language for economic problems). It extensively uses the data on the ALGOL-60 language, the SUBSET ALGOL-60 (IFIP) language, and the input-output procedures developed for ALGOL. The present work also makes use of the ideas of COBOL-60 language and the input-output procedures developed elsewhere (D. E. Knuth, L. L. Bumgarner, P. Z. Ingerman, J. H. Werner, D. E. Hamilton, M. P. Lietzke, D. T. Ross, A Proposal for Input - Output Conventions in Algol-60 (A Report of the Subcommittee on ALGOL of the ACM Programming Languages Committee). Communications of the ACM, V.7, N 5, May 1964.) The proposed language may be utilized for the composition of pro-

Card 1/2

UDC: 681.142.001:330.115

STOLYAROV, G.M., inzh., red.; PEVZNER, A.S., red. izd-va; TOKER, A.M., tekhn.  
red.

[Manual of consolidated indices of the cost of planning and research]  
Spravochnik ukрупnennykh pokazatelei stoimosti proektnykh i issledovatel'skikh rabot. Vvoditsia v deistvie s 1 ianvaria 1958 g. Pt.7.  
[Enterprises of the coal industry] Predpriiatiia ugol'noi promyshlennosti. 1957. 26 p. Moskva, Gos. izd-vo po stroit. i arkhitekt. (MIRA 11:8)

1. Russia (1923-  
stroitel'stva.

U.S.S.R.) Gosudarstvennyy komitet po delam

(Coal)

STOLYAROV, G. V. Cand Med Sci -- (diss) "Electrical activity of the cerebral cortex during cerebral arteriosclerosis with psychio disorders." Mos, 1957.

14 pp (1st Mos Order of Lenin Med Inst im I. M. Sechenov), 200 copies

(KL, 45-57, 99)

STOLYAROV, O.V.

Electrical activity of the cerebral cortex in cerebral arteriosclerosis combined with mental disorders [with summary in French]  
Zhur.nevr. i psikh. 57 no.8:961-966 '57. (MIRA 10:11)

1. Kafedra isikhiatrii (dir. kliniki - prof. Ye.A.popov) i Moskovskogo ordean Lenina meditsinskogo instituta imeni I.M.Sechenova.

(MENTAL DISORDERS, etiology and pathogenesis,  
arteriosclerosis of brain, EEG (Rus))

(ARTERIOSCLEROSIS, complications,  
brain, causing ment. disor., EEG (Rus))

(BRAIN, blood supply,  
arteriosclerosis causing ment.disord., EEG (Rus))

(ELECTROENCEPHALOGRAPHY, in var. dis.  
arteriosclerosis of brain with ment.disord. (Rus))

BANSHCHIKOV, V.M.; STOLYAROV, O.V. (Moskva)

Arteriosclerotic psychoses; review of foreign literature published during 1940-56. Zhur.nevr. i psikh. 57 no.8:1044-1050 '57.

(MIRA 10:11)

(ARTERIOSCLEROSIS, complications,  
psychoses, review (Rus))  
(PSYCHOSES, etiology and pathogenesis,  
arteriosclerosis, review (Rus))

BANSCHIKOV, V.M.; STOLYAROV, G.V. (Moskva)

Relation between arteriosclerotic and hypertensive psychoses. Zhur.  
nevr. i psikh. 58 no.1:121-128 '59. (MIRA 11:2)

(ARTERIOSCLEROSIS, complications,

psychoses, relation to hypertensive psychoses, review (Rus))

(HYPERTENSION, complications,

psychoses, relation to arteriosclerotic psychoses, review  
(Rus))

(PSYCHOSES, etiology and pathogenesis,

arteriosclerosis & hypertension, interrelation, review  
(Rus))